

3/27/69

APOLLO PROGRAM DIRECTIVE NO. 40A

TO: DISTRIBUTION

FROM: *Sam C. Shultz*
APOLLO PROGRAM DIRECTOR

SUBJECT: LAUNCH CRITICAL SPARES MANAGEMENT

OFFICE OF PRIMARY RESPONSIBILITY: MAP-2

I. PURPOSE

This Program Directive provides the definition of Launch Critical Spares and the criteria for their selection; the responsibilities and actions required for managing these spares at KSC; and the requirements for status reporting. The objective is two-fold: (1) establish the optimum spares to achieve high degree of launch-on-schedule probability; (2) provide the Apollo Program Director, Managers, and their staffs with central unified management data controls for decision making purposes.

II. SCOPE

The provisions of the Directive apply to all MSF Center organizational elements having management responsibility for Apollo Program equipment that must function during launch operations at Kennedy Space Center.

III. DEFINITION AND SELECTION OF CRITERIA

A. The definition of a launch critical spare is:

A component, part, or assembly to be used in replacing an item whose satisfactory operation has been determined by the design activity to be mandatory to launch operations.

B. The criteria to be used for the selection of launch critical spares are:

1. Item is mandatory for launch/mission.
2. It is a first level maintenance item.
3. Once countdown has started, the failed part can be identified and removed and the replacement part installed and verified in the system within 12 hours. (The 12 hour down-time is defined to be from fault detection through resumption of countdown.)

3/27/69

IV. ACTION REQUIRED

KSC-MSC-MSFC

A. Using the above criteria (and the management principles of the Apollo Logistics Requirements Plan - NHB 7500.1), each Center shall take that action necessary on those systems for which it has design engineering responsibility to:

1. Identify all Launch Critical Spares by maintenance requirements and safety analyses to assure that all identified Launch Critical Items can be fault-isolated, removed, and replaced, and the replacement part verified in a safe manner during launch count-down scheduled holds. On existing contracts, engineering judgment and operational experience are criteria considered to meet the overall intent of a maintenance requirements analysis. However, if there should be a major system change requiring new contractual coverage, a maintenance requirements analysis shall be performed for the identification of applicable spares.
2. Position the established levels of Launch Critical Spares at KSC prior to the start of CDDT. Actions must include positioning of associated Maintenance Ground Support Equipment (MGSE) and the supporting operating and maintenance manuals at the launch site.
3. Establish a spares replenishment plan to assure optimum KSC stockage levels for each designated Launch Critical Item. A rapid resupply capability shall be incorporated in the plan.
4. Discriminately provide for supply services and establish inter-center procedures/agreements for transportation, accountability, storage and issue and reporting.

B. Operating procedures shall be established to:

1. Assure spares configuration update resulting from approved change actions.
2. Review and revise as required the stockage levels on a continuing basis using actual failure/usage data.
3. Assure Launch Critical Spare Parts are available to cover new equipment incorporated into any system.

C. Establish a central point of contact/office of responsibility for the uniform implementation of this Program Directive.

3/27/69

- D. Each Center shall submit Launch Critical Spares Status Reports to the designated APO and KSC offices as defined in V. below.

V. REPORTING

A. STATUS REPORTS

Each MSF Center is responsible for submitting Launch Critical Spares status reports to the Apollo Program Office, MAP-2, for Apollo equipment/systems under their management responsibility. MSC and MSFC shall forward information copies of the reports to KSC, ADN. Separate reports will be submitted for each Apollo mission and shall be initiated ten full weeks prior to a scheduled launch.

B. FREQUENCY OF STATUS REPORTS (Figure 1)

The initial report from each Center for each launch shall be submitted as of the first Friday of the 10th week preceding a scheduled launch. With two launches being scheduled within a 10-week time period, special reporting instructions will be issued by MAP-2. Starting with the sixth full week prior to a launch and continuing to the last Friday before a launch, weekly reports shall be submitted. All reports shall be submitted as of close of business each Friday and forwarded to APO, MAP-2 by electrical transmission within three working days after the "as of date".

- C. The reporting format shall be identical to Figure 1. The report shall include the following items for each system and for GSE:

1. Total L/C Identified - In consonance with the definition and selection criteria of III above, enter the total number of Launch Critical Spares identified and required to support a specific launch.
2. On Hand - These are the line items available at the launch site for the Operations and Maintenance activity.
3. Due in by CDDT - Enter the number of line items which have an estimated on dock dated prior to the start of CDDT.
4. Remarks - Include a statement on each item that will not be on hand at the start of CDDT for which acceptable work-arounds will not be available by CDDT. The statement should include probability of failure of the item, impact to launch, or other pertinent information.

3/27/69

- D. Each Center shall be prepared to provide a full report of the Launch Critical Spares problems for their respective items at each FRR. The report shall include, as a minimum, the following:
1. Line items at launch site with less than minimum stockage levels by start of CDDT.
 2. Work-around procedures available, by number and type, for those items not in place by the start of CDDT.
 3. Impact to launch - explain the launch risk involved if a Launch Critical Spare is not available and a work-around procedure has not been developed.

VI. IMPLEMENTATION

- A. Implementing actions shall begin immediately with a full compliance objective by 11 April 1969.
- B. Each Manned Space Flight Center shall prepare implementing directive and submit copies to Apollo Program Director within 30 days following release of this APD.

SUMMARY _____ LAUNCH CRITICAL SPARES STATUS				Design Agency					
AS OF _____									
Operating Activity/System	Total L/C Ident	On Hand	Due in by CDDT	Remarks					
Data Source	Org.			Date					

Figure 1

To: [Handwritten signature]



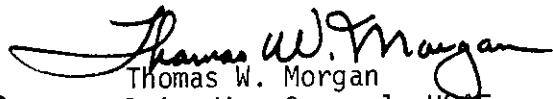
JOHN F. KENNEDY SPACE CENTER, NASA
KENNEDY SPACE CENTER, FLORIDA 32899

AUG 10 1970

REPLY TO
ATTN OF: AA-PCO-2

TO: Distribution
FROM: Manager, Apollo-Skylab Programs
SUBJECT: Change to Apollo Program Directive #40A, "Launch Critical Spares Management"

A copy of the change to APD #40A is attached for your information. This change reduces the number of launch critical reports required for each mission. KPD 7500.1 will be revised to reflect this change; however, this office will continue to issue implementing letters giving both "as of" and "due in AA-PCO" dates for each MSF Mission.


Thomas W. Morgan
Brigadier General, USAF

Attachment: a/s

Distribution:
STD-L-B

7/14/70

APOLLO PROGRAM DIRECTIVE NO. 40A

TO: Distribution

FROM:

Rocco A. Petrone

Rocco A. Petrone

Apollo Program Director

JUL 21 1970

SUBJECT: Change to Apollo Program Directive No. 40A
Launch Critical Spares Management

I. PURPOSE

This change reduces the frequency of launch critical spares reports from seven to two for each Apollo launch.

II. PARAGRAPH V.B., FREQUENCY OF STATUS REPORTS

This paragraph of subject directive is revised as follows:

The initial report from each Center for each launch shall be submitted concurrent with the input to the Flight Readiness Review. The second and last report shall be submitted 5 days prior to Wet CDDT. Reports are to be forwarded to APO, MAP-2 via datafax.